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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/788,566	02/27/2004	Neal F. Vittitoe	2003-0173.02/4670-238	9095

7590 03/09/2007
LEXMARK INTERNATIONAL, INC.
ATT: JOHN J. McARDLE, JR.
740 WEST NEW CIRCLE ROAD
LEXINGTON, KY 40550

EXAMINER

WASHINGTON, JAMARES

ART UNIT	PAPER NUMBER
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2609

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/788,566

Applicant(s)

VITTITOE, NEAL F.

Examiner

Jamare Washington

Art Unit

2609

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 2/27/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

1. The drawings are objected to because multiple figures (Fig. 2, 3, etc.) are shown with numerals pointing to empty “boxes/objects”. Each “box/object” depicted in the drawings should be accompanied by a label clearly stating the object to which the numeral is pointing in accordance with the specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description:

Fig. 2, Numerals 38 and 46.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "20" has been used to designate both a registration roller (Fig. 2) and a print engine (Figs. 1, 4, and 5). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the

examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

4. The disclosure is objected to because of the following informalities:

In the background of the invention (page 2, line 17), (i.e., the font size gets increases) should read (i.e., the font size increases).

Appropriate correction is required.

Claim Suggestions

5. Claim 4 appears to state that the user includes an operator's panel instead of the actual device having the operator's panel. To alleviate possible confusion, the following is suggested:

"The method of claim 3 wherein the user comprises an operator panel on the image forming device to receive user input" should read "The method of claim 3 wherein the image forming device comprises an operator panel to receive user input".

The above-proposed correction will be utilized hereinafter for purposes of examination. However, appropriate correction by applicant is suggested.

Claims 6 and 7 appear to lack antecedent basis for the use of the phrase “The image output device...”. This phrase should read “The printing system...” to promote uniformity in claimed subject matter.

The above-proposed correction will be utilized hereinafter for purposes of examination. However, appropriate correction by applicant is suggested.

Claim Objections - 37 CFR 1.75(a)

6. The following is a quotation of 37 CFR 1.75(a):

The specification must conclude with a claim particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention or discovery.

Claim 6 is objected to under 37 CFR 1.75(a), as failing to particularly point out and distinctly claim the subject matter which applicant regards as his invention or discovery. Claim 6 currently depends from itself. When read in conjunction with the previous claimed subject matter, it is clear that claim 6 should depend from claim 5. The aforementioned correction will be made hereinafter for purposes of examination. However, appropriate correction by applicant is required in future correspondence.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 2, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robert P Loce et al (US 20030058474 A1) in combination with Joyce Farrell (Print Quality Metrics for Grayscale Text).

Regarding claim 1, Loce et al discloses a method of rendering text in an image-forming device (“...a method and apparatus have been developed...In one embodiment, the method comprises determining a rendering quality related characteristic of the text component...” at paragraph [8]) comprising:

providing a user interface (“Many documents are created with electronic authoring tools...In a personal computer environment, documents are created with word processing programs. When these tools are used, an author specifies (...by active selection) characteristics for the text used in the document” at paragraph [35]”);

receiving a “user-defined font...input” by a user from said user interface (“The text feature characteristic recognizer 814 receives an image or document from an image source...such as a document authoring tool...” at paragraph [44])’

selecting a halftone screen for text based on text size and a user defined font “input” (“The halftone screen selector or generator 818 either selects a screen from a database of available screens or generates a screen for halftoning a particular text component...” at paragraph [47] “Examples of rendering quality related characteristics include...font size...” at paragraph [8]”);

rendering the text with the selected halftone screen (Fig. 7, numerals 740 and 760)

However, Loce fails to teach the “user-defined font input” as being a font sharpening input.

Farrell teaches, in the same field of endeavor of enhancing print quality of text characters, font sharpening as an enhancement when rendering text to be printed (“Attribute metrics are measurements of identifiable features in print samples that are known to influence subjective print quality. For example...character jaggedness and character edge sharpness...” at page 1, paragraph 3, line 4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use font sharpening as taught by Farrell as the user-defined font input from the authoring tool as taught by Loce because “...character jaggedness and character edge sharpness are...very important attributes that have been shown to affect text print quality [1]”. Correcting these attributes will allow for better character appearance and aid in print out readability.

Regarding claim 2, Loce of the Loce and Farrell combination teaches selecting a halftone screen comprising comparing the text size to the font sharpening threshold and selecting the halftone screen based on the outcome of the comparison (“...the determined rendering quality related characteristic (font size as described above) information is used to guide the selection 730...of a halftone screen...” Loce at paragraph [39]. “...additionally, where omega plane bits indicate a dimension such as a thickness or width of a text component, a halftone screen...is generated” Loce at paragraph [39].) Dimensions such as thickness or width of a text component is known in the art as being the components which, when adjusted, directly effect the visual clarity (sharpness) of text characters (“A screen can be selected to have a screen frequency or period that is in closer harmony with the width or thickness of the main body 310. Such a selection would provide a “K” with both crisp inner and outer main body edges” Loce at paragraph [30]).

Regarding claim 5, the Loce and Farrell combination discloses a printing system (“...the rendering device 826 is a xerographic printer” Loce at paragraph [49]) comprising:

a user interface as rejected above; a raster image processor (“...the text component characteristic recognizer 814 maybe part of or work in close association with a rasterizer” at paragraph [52] Fig. 8, numerals 814, 818, and 822.) programmed to render text using a halftone screen with a halftone frequency selected based on text size and user-defined font sharpening threshold input by a user via said user interface as rejected above; and a raster output device operatively connected to the raster image processor to generate a visible output image using the

halftone image output by the raster image processor (“For example, the rendering device 826 may be an ink jet printer” at paragraph [49], Fig. 8 numeral 826).

9. Claims 3, 4, 6, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Loce and Farrell combination as applied to claims 1 and 2 above, and further in combination with Yee S. Ng et al (US 7079287 B1).

Regarding claim 3, the Loce and Farrell combination teaches selecting a halftone screen based on certain text character parameters (“...selecting a halftone screen based on a compatibility with the rendering quality related characteristic of the text component...” at paragraph [8]).

The Loce and Farrell combination fails to teach selecting a halftone screen with a relatively higher halftone frequency when the text size is less than the font sharpening threshold, and selecting a halftone screen with a relatively lower halftone frequency when the text size is greater than the font sharpening threshold.

However, Ng teaches the above deficiencies in the Loce and Farrell combination (Since the edges of non-saturated text have a high likelihood to use mostly the high frequency soft pictorial screen...and while the interior of the larger text has a higher likelihood to use mostly the lower frequency screen...” at column 5 line 18). It is well known in the art that a higher halftone frequency screen is used to produce detailed, sharp images/text normally viewed at a close distance (e.g. small font) with respect to the viewer, because of the compactness of the halftone dots within a square inch. A lower halftone frequency screen would be used for larger font to avoid jagged artifacts.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the halftone screen frequency teachings of Ng in the Loce/Farrell combinatorial method above because a sharper text character would be produced for both small and large font thus enhancing readability.

Regarding claim 4, while Loce of the Loce, Farrell, and Ng combination teaches sending user input from a remote location (e.g. authoring tools via a computer system), the Loce, Farrell, and Ng combination does not expressly teach an operator panel on the image-forming device to receive user input.

However, it is well known in the art to provide an image-forming device with an operator panel to receive user input (Official Notice).

It would have been obvious at the time the invention was made to one of ordinary skill in the art to provide Loce, of the Loce, Farrell, and Ng combination, with an operator panel on the image-forming device for receiving user input because one would need to control various printer functions.

Regarding claim 6, the Loce, Farrell, and Ng combination teaches the image output device as rejected above.

Regarding claim 7, Loce of the Loce, Farrell, and Ng combination teaches wherein the raster output device is an electrophotographic print engine (“In a xerographic environment, the rendering device 826 is a xerographic printer” Loce at paragraph [49]). It is well known in the

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art that electrophotography refers to producing photographic images by electrical means, and xerography is a form of electrophotography for “copying” documents. Therefore, a xerographic “printer” is a type of electrographic printer and the xerographic print engine described by Loce could very well be substituted with an electrophotographic print engine without teaching away from the invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jamares Washington whose telephone number is (571) 270-1585. The examiner can normally be reached on Monday thru Friday: 7:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Brian Werner can be reached on (571) 272-7401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Jamare Washington
Junior Examiner
Art Unit 2609

JW
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A handwritten signature in black ink, consisting of a large, stylized 'B' followed by a horizontal line extending to the right.

BRIAN WERNER
SUPERVISORY PATENT EXAMINER